



Ø BEAT



COLO. SPRINGS,
COLORADO

O C T O B E R

1 9 7 6

MEETING NOTICE - Pikes Peak Radio Amateur Association will meet this month on October 13th at 7:30 P.M. in the Security Savings & Loan Building, East Platte at Union Boulevard. Any person interested in Amateur Radio is invited to attend.

ELECTION TIME - The main item of interest at the October meeting will be the election of officers and board directors for the coming year. To help in the election procedure, PPRAA has a nominating committee to pick members they recommend for the board and as officers. In addition, any club member meeting the qualifications can be nominated at the election meeting by another club member. If you have someone in mind that you think will make a good director and/or officer and who is willing to serve, the nomination will be most welcome.

The following persons will be recommended by the nominating committee for these offices: President, Mike Stansberry, KØTER; Vice-President, Lyle Rockefeller, WBØMDI; Secretary, Dave Allen, WBØTAG; and Treasurer, Dean Jaynes, WAØPJH. Recommended as Board Members are Ray Uberecken, WØWYZ, and Frank Freela, call letters not known. All have agreed to serve in these capacities if elected. You don't agree with some of the nominating committee's recommendations? Then be at the October meeting to make your own nominations and, above all, to vote. The persons elected at this meeting will govern PPRAA for the coming year and will decide if PPRAA will keep its place as one of the top amateur radio clubs in this area or fade away to just a memory. Can you afford not to be there to cast your votes?

BYLAW CHANGE - The following is a change in the bylaws of PPRAA as proposed by the Board of Directors in their September meeting and to be voted on by club members during this October meeting: Amendment of Article 4, Section 2 to read as follows: "The officers of the association shall be elected from the members at large at the regular annual meeting of the members by ballot, by plurality vote of the voting members present. Such individual, if not presently serving as a board member, automatically becomes a board member for

ZERO BEAT

Published in the interest of the members
of the Pikes Peak Radio Amateur Association
Inc. Colorado Springs, Colorado

R. Charles Smith, WAØZZS
Editor, Phone 635-7353



Address all items and exchanges to:
1523 Mt. Everett
Colorado Springs, Colorado 80909

Permission is granted to reprint articles
or excerpts thereof provided full credit
is given.

Ed Pompea, KØZPG, Business Manager
2111 Trent Ave. Colo Springs, Co 80909
Phone 635-7554

Louis Preller, WØPCZ, Distribution
4170 Hemlock, Colo. Spgs. CO. 80917
Phone 591-1723

The PPRAA meets at 7:30 P.M. on the second
Wednesday of each month in the Security
Savings & Loan Building, East Platte at
Union Boulevard.

PPRAA DIRECTORS

PRESIDENT	
Bill Croghan	WBØKSW
1030 W. Colorado Ave.	471-7504
VICE PRESIDENT	
Chuck Myers	WAØZCS
1120 Yosemite Dr.	632-0848
SECRETARY	
Bart Hayhurst	WAØYOH
1219 Oswego	635-1632
TREASURER	
Dean Jaynes	WAØPJH
116 N. 24th St.	634-7097
BOARD CHAIRMAN	
Ken Hull	WBØNOS
3614 Sheffield Lane	598-6099
BOARD MEMBERS	
Pete Demario	KØUDG
2010 McArthur Ave.	475-9666
Mike Stansberry	WBØHCK
2732 E. Monument	475-8650
Bob Tate	WBØJT
4523 Palmer Park	596-5004

a two year term." The proposed change was signed by the following current
board members present at the meeting: Charles Myers, WAØZCS; Bart Hayhurst,
WAØYOH; Dean Jaynes, WAØPJH; Kenneth Hull, WBØNOS and Mike Stansberry, KØTER.

HELP WANTED: Due to an ever increasing amount of personal commitments, I
regret to announce I will have to tender my resignation as editor of ZERO BEAT
effective with the November issue. An IBM Selectric I typewriter is furnished
with the position along with Ham Radio Report and other publications to help
make the preparation of this monthly club newsletter a little easier. Anyone
interested in this position should contact any officer or board member of the
club. This is your chance to get your ideas in print and serve PPRAA at the
same time.

1977 BICENTENNIAL RELAY of a message of congratulations to the U.S. President-
elect is being planned for November 8, the Monday after the election. The
unique Bicentennial Year project was conceived and is being spearheaded by the
Chicago Chapter of the Quarter Century Wireless Association, and is reminis-
cent of the first Amateur Radio Presidential Relay that took place in 1916,
60 years ago. The Governors of the 50 states will originate the congratu-
latory messages, which will then be relayed by a variety -- hopefully all --
modes of Amateur Radio to the appropriate destination. The actual delivery
will be by a group consisting of QCWA member W9CI, who participated in the
original relay in 1916, ARRL President W2HD/W2TUK, QCWA President W2ALS, and

Foundation for Amateur Radio President K4MM, who's also Chairman of the Bicentennial Relay project.

Arrangements for gathering and forwarding the 50 messages are being handled jointly by QCWA Chairmen and ARRL SCMs for each of the states. They will be delegating responsibilities for details such as publicity, and since time is limited volunteers are needed right away. Anyone interested in taking part should contact local QCWA officials, their SCM or W9MOL for further information. If it comes off well, the Bicentennial Relay will bring lots of fine publicity to Amateur Radio -- help if you can.

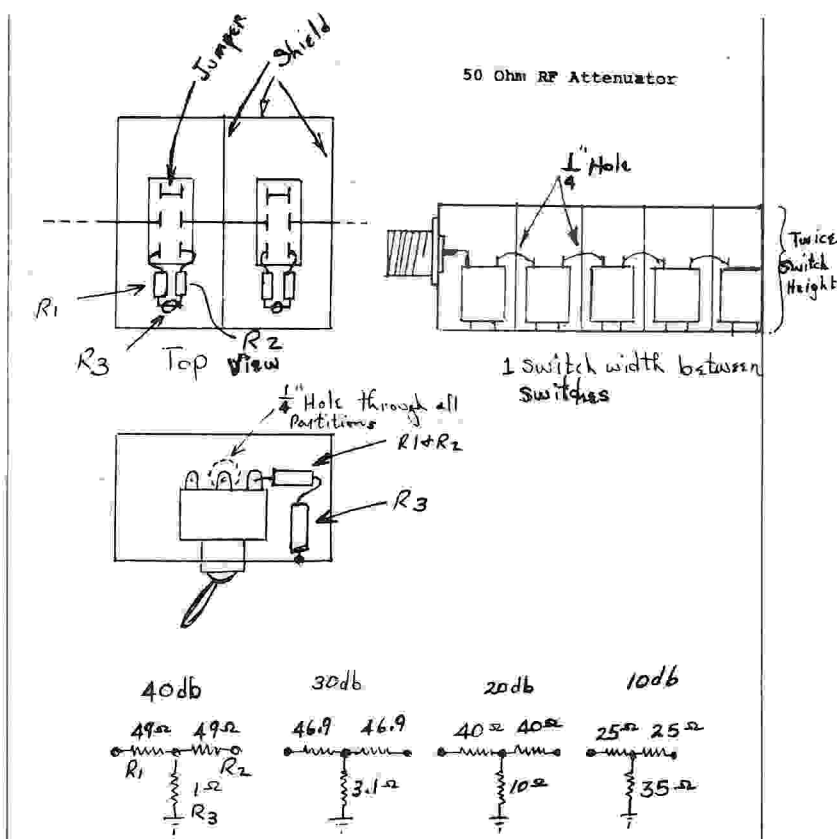
HR REPORT

RF ATTENUATOR DESIGN/CONSTRUCTION by LeRoy Smith (Smitty), WBØLTV: First consideration is to determine the number of sections and total attenuation. 110 to 115 db is about optimum before leakage problems become serious. The next step is to procure the number of DPDT toggle/ slide switches you will need. These should be new so they will have minimum insertion resistance. Their physical size will determine the overall size of the attenuator.

Next, procure a square foot or so of flashing copper if possible. Double sided P.C. board can be made to work as well. Make a simple U-shaped basic chassis with total length to give an overall length of 9 times switch width. End height should be twice switch height and width should be twice switch length. (See sketches). Now, space first switch from end of partition, half the width of the switches. The next switch should be one switch width from first switch, and so on, ending with a half switch width from the end. Make your partitions the same width and height as the end panels. Include a 1/8th inch lip to solder to basic chassis ("L" shape). Next, drill or punch a 1/4" diameter hole centered on the center lug of the switch. Mount switches and check connector positions so everything will go together smoothly.

At this point begin wiring with the soldering in of the jumpers on the switches. Solder in the partitions, inter-connect the arms of the switches and then solder in the side of the package next to the shorted terminals of the switch. This leaves the actual attenuator section to be worked on. Commercial units have sections arranged so that when you face the toggle handles, that "up" is attenuation inserted and "down" is zero attenuation and that maximum attenuation is to the left. Use 1/4 watt 5% resistors of the carbon variety. Do NOT use film or wire wound resistors! Begin by cleaning leads of contaminants so that they solder quickly and don't become over heated and change value. Take R1 and R2, fold lead at 90° to body at body time lead to about 1/2" each end. Take shunt resistor, R3, form small loop in lead at resistor body large enough to accept R1 and R2 leads only. Cut other lead of R3 to about 3/8". Now, carefully assemble R1 and R2 into switch and position R3 as shown in top view. Form bottom lead of R3 so that R1 and R2 are level and R3 stands vertically. I form a loop flat against chassis of R3's ground lead.

This may sound very complicated, but in order to reduce leakage and maintain accuracy, these procedures will have to be followed precisely. When all sections have been wired, solder in the remaining side plate. Then, mount the sub assembly inside a second enclosure of such size (hopefully) so that the end plates and connectors are in contact. Solder all seams on the subassembly as if you were trying to make it hold water without leaking. Any unsoldered seam can and will leak RF. This about completes things. The attenuator may be checked for attenuation accuracy with a audio oscillator and db meter. If you have used resistor values specified and haven't over-heated them, the accuracy will total out to within 1/2 db. See sketches on following page.




The five section attenuator is an optimum size for Ham work. Suggested total is 110-115 db, maximum. Example: 1 each 40 db; 3 each 20 db and 1 each 10 db. Leakage problems around the sections is the limiting factor.

AN INCENTIVE FOR CBERS to become Amateurs is being offered by Yaesu Electronics. A news release going to CB and consumer electronics publications offers Amateurs licensed between November 1, 1976 and June 30, 1977 a \$25.00 refund on their purchase of an FT-221 plus a \$4.00 reimbursement of their license fee. Choice promotional idea, both for Amateur Radio and Yaesu.

HR REPORT

MILLI or KILO, WATTS THE ANSWER! by Mike Anderson, WBØLEY-MMR3/DU: How many of you high-strung Hams have ever wondered "Is my Kilowatt enough to get me into Pueblo or Denver?" Of course this is exaggerating a bit, but how many of us really use too much power? Why not go QRP or QRPP? The low power adds



**CW ELECTRONICS
SALES COMPANY**

"It Speaks for itself"
signal/one

DISTRIBUTORS OF ELECTRONIC EQUIPMENT

THE ROCKY MOUNTAIN AREA'S LEADING
SUPPLIER OF AMATEUR RADIO EQUIPMENT

AUTHORIZED FACTORY SERVICE

STORE HOURS

Monday - Friday: 8:30 am - 6 pm

Saturday: 8:30 am - 1:00 pm

**1401 BLAKE ST., Corner of SPEER BLVD & BLAKE ST
DENVER, COLO. 80202 PHONE 893 - 5525**

John WABADV
Mike WABKXR

Carey WABECS
Gary WABKLP

John WBFU

FREE PARKING ACROSS STREET FROM STORE


WALKER ELECTRONICS

2838 N. Prospect - Colo. Spgs.

Phone 636-1661

...WHOLESALE ELECTRONICS TUBES ANTENNAS TEST EQUIPMENT

AUTHORIZED **SYLVANIA** DISTRIBUTOR


AUTHORIZED GENERAL ELECTRIC DISTRIBUTOR

excitement for the young at heart, and to the professors in our midst, propagational forecasting would lead into a study to efficiently utilize the equipment's reduced power capability. What about taking your rig to the mountains on a backpacking trip? Or working for the WAS-DXCC QRP - I only know of two DXCCs issued to this date. Could you be number 3? One point to remember is that Teller County is sought by the County Hunters. (Hint!)

I plan to go bicycle mobile Ø, mostly on 10 meters because of antenna limitations. How many of those have you heard? I also plan on my first leave, when the ship returns to the States to take the ARGONAUT up Mount Manitou and see where I can go way up there. The east coast? Europe? Who knows! I like the Novice CW bands and plan to work them a lot. I would like to sked as many Novices in Colorado Springs as possible, so all you Novice fellas write to me with Frequency capability as well as call, name, phone numbers, and for the short time I am there we could set up a ragchew net.

I'm sorry, I lost track of the main topic. What can 3ws out do? How about a 2000 mile contact from Portland to Illinois? I was using Ten-Tec Argonaut, 88 foot longwire antenna with homebrew tuner on 40 meters CW. The two outstanding QRP units I have seen and used are the Ten-Tec Argonaut and the Heathkit HW-7 and HW-8. I prefer the Argonaut because it also has SSB in with the CW mode. The Argonaut can be put into a suit case with key, mike, antenna and battery, and away you go off to DX from the most remote QTH. My address for Novice replys or anyone else who wants to write is: M. L. Anderson, EM3, 522-86-9303, Division E, USS Ogden, LPD-5, FPO San Francisco 96681.

DRAKE'S FS-4 SYNTHESIZER for use with the R4 and SPR-4 receivers has had its spur problem solved and shipping will begin shortly. A component (IC) problem rather than a design deficiency caused the glitch -- original specs and prices still apply. Rumor that Drake had been bought by a Japanese manufacturer circulated recently is strictly rumor -- it's still family owned.

HR REPORT

U.S. AMATEUR POPULATION reached 279,253 at August's end, up from 256,875 a year ago, with August alone counting for an increase of 4,486 in the operator count. Novices now total 31,970 with 3,249 added last month alone. The big boom in training programs is really starting to pay off! Ham Radio offers a special "Instructor Support Program" for those engaged in training courses for new Amateurs. Under the program an instructor can order an ample supply of training materials for his maximum expected enrollment from Ham Radio's current book catalog in time to have them for his first class, but need pay only 25% of their cost. Then, after the class has started and he's been paid by the students, he returns any unused materials and pays only for what was actually used. Interested instructors should call Ed Buffington at Ham Radio for details.

HR REPORT

SOME AMATEUR EXAMS may have questions for which no valid answers are offered due to the many recent rules changes. Most of such questions are already known to the FCC, and credit for a correct answer is given automatically whether it's answered or not. However, to be on the safe side it's a good idea to call the examiner's attention to such an item when you're taking an FCC administered test. In the case of a Novice exam with a volunteer examiner, the examiner is not supposed to look at the exam but should advise the examinee to note the problem in the margin of the answer sheet where the scorer in Gettysburg will notice it.

HR REPORT



Ø BEAT

COLO. SPRINGS,
COLORADO

OCTOBER
1976



ZERO BEAT

Louis Preller
4170 Hemlock
Colorado Springs, CO. 80917

FIRST CLASS MAIL



D & M ELECTRONIC SUPPLY

715 N. Weber Street
P.O. Box 1777, Colorado Springs, Colo 80901
Phone: 633-4666

Wholesale Radio, TV, Parts, Tubes, Batteries
Industrial Electronics, Test Equipment

Now also serving you
as a GE electrical
hardware distributor

AUTHORIZED

RCA

DISTRIBUTOR

DEAN JAYNES WAØPJF
9650 VOLLMER RD.
COLO SPRINGS CO
80908